INSTALLATION RESTORATION PROGRAM

2006-2007

Naval Air Station Fallon
Fallon, Nevada

INSTALLATION HISTORY AND DESCRIPTION

Naval Air Station (NAS) Fallon is located seven miles southeast of Fallon (pop. approx. 9,000), the County Seat of Churchill County, in one of Nevada's top agricultural areas, the Lahontan Valley. The high desert and rugged mountains hold both Carson City and Reno within an hour's distance. Nevada's "Old West" history of pioneers, miners, and Native Americans surrounds the base.

NAS Fallon, the Navy's premier tactical air warfare training facility, began as a WWII Army Air Corps airstrip in 1942. It was part of the Western Defense Program at that time. When the threat of Japanese attack was eliminated, the Fallon air base was offered to the Navy to train pilots for the air war in the Pacific. At that time the airfield fell under the command of Naval Air Center Alameda and was designated as a Naval Auxiliary Air Station. At war's end, Fallon was placed in caretaker status until designated, again, as an Auxiliary Landing Field for NAS Alameda during the Korean War.

In 1958, with new construction completed, the landing field was named after Fallon native, Lt. Comdr. Bruce Van Voorhis. Van Voorhis won the Medal of Honor for valor on a 1944 mission against the Japanese at the Solomon Islands. Fallon was designated a Naval Air Station in 1972, after millions of dollars spent in the early 1960's expanded the station and its ranges to prepare aircrews for Vietnam duty.

Today, NAS Fallon's mission is "To provide the most realistic integrated air warfare training support available to carrier air wings, Marine air groups, tenant commands, and individual units participating in training events including joint and multinational exercises." NAS Fallon is currently the only Navy facility where advanced integrated Carrier Air Wing Strike training can take place. Military aircraft from the Navy, Air Force, Marine Corps, and Nevada Air National Guard all train at NAS Fallon. NAS Fallon features 4 air-to-ground training ranges, an electronic warfare range, a 14,000-foot runway and clear flying weather for more than 300 days per year. The Fallon base is home to the Naval Strike and Air Warfare Center, the Strike Fighter Weapon Detachment, Fighter Squadron Composite 13, and Construction Battalion Unit 303.


Fallon Naval Air Station - 1945

As of 2006, NAS Fallon base population is about 3,000 active duty and civilian Department of Defense (DoD) personnel. The main base covers 8,583 acres, while training ranges utilize an additional 241,338 acres. The Fallon Range Training Complex encompasses more than 13,000 square miles of airspace east of Fallon, Nevada.

For more information about NAS Fallon visit websites at: http://www.fallon.navy.mil and http://ndep.nv.gov/nasf/home.htm;

THE INSTALLATION RESTORATION PROGRAM

A Phased Approach

The Installation Restoration Program (IRP) is designed to ensure that DoD facilities, through the Defense Environmental Restoration Program (DERP), comply with environmental legislation outlined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of December 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of October 1986. There are three general phases in the IRP process. [See CERCLA IRP Process Chart, p.4.]

Phase I: PA/SI

The IRP at NAS Fallon began with Preliminary Assessment/Site Inspection (PA/SI). The PA/SI utilized employee interviews, site inspections, record searches, and limited analytical testing to identify areas of potential environmental concern. Environmentally sensitive sites were recommended for inclusion in Phase II (Remedial Investigation/Feasibility Study). Phase I activities were completed for NAS Fallon in April 1988. The resulting report identified twenty-one sites at NAS Fallon with potential environmental impacts and recommended these sites for inclusion in Phase II activities.

Phase II: RI/FS

The objectives of the Phase II investigation are to further assess environmental impacts at the twenty-one sites of interest and to recommend appropriate remedial measures. In order to meet these objectives, Phase II activities consisted of a remedial investigation (RI) and a feasibility study (FS). The RI included confirming and quantifying environmental impacts at the sites of concern, and the FS included developing and evaluating remedial alternatives to provide environmental protection from any contaminants confirmed to be present for each of the contaminated sites. Phase II work also included performing risk analysis through a systematic evaluation of the available characterization data. The RI satisfied three critical categories of information needs: (1) verification of impacts; (2) characterization of the extent and concentration of chemicals in soil and groundwater at each site; and (3) assessment of potential for migration of chemicals away from the site in groundwater, surface water, or other media of concern at levels harmful to human health or the environment. Phase II activities commenced at NAS Fallon in September 1988.

Phase III: RD/RA

The third phase of the IRP involves the Remedial Design/Remedial Action (RD/RA). For each site that requires remediation, the Navy selects a cleanup method from the alternatives evaluated in the FS. A Proposed Plan then describes the methods by which environmental impacts will be addressed. Following receipt of public comments on the Proposed Plan, a Record of Decision (ROD) is developed that describes the selected cleanup measure(s). The ROD is followed by design and implementation of those cleanup measures. The selected cleanup method can be as simple as soil excavation or as complex as an integrated soil and groundwater treatment system.

CLEANUP IN COLLABORATION WITH THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION AND THE COMMUNITY

NAS Fallon effectively reaches its IRP goals by working in close collaboration with the Nevada Division of Environmental Protection (NDEP) and the Fallon community.

NAVY-NDEP PARTNERING

NAS Fallon partners with NDEP to create a collaborative working environment, providing a platform for open communication, trust, and teamwork. Within this framework, NAS Fallon coordinates all stakeholder activities, including those associated with the Restoration Advisory Board (RAB). For more information visit http://ndep.nv.gov

- Nevada Division of Environmental Protection
- Naval Facilities Engineering Command SW
- Restoration Advisory Board
- Naval Air Station Fallon
- Investigation Contractor(s)
- Cleanup Contractor(s)
- Community

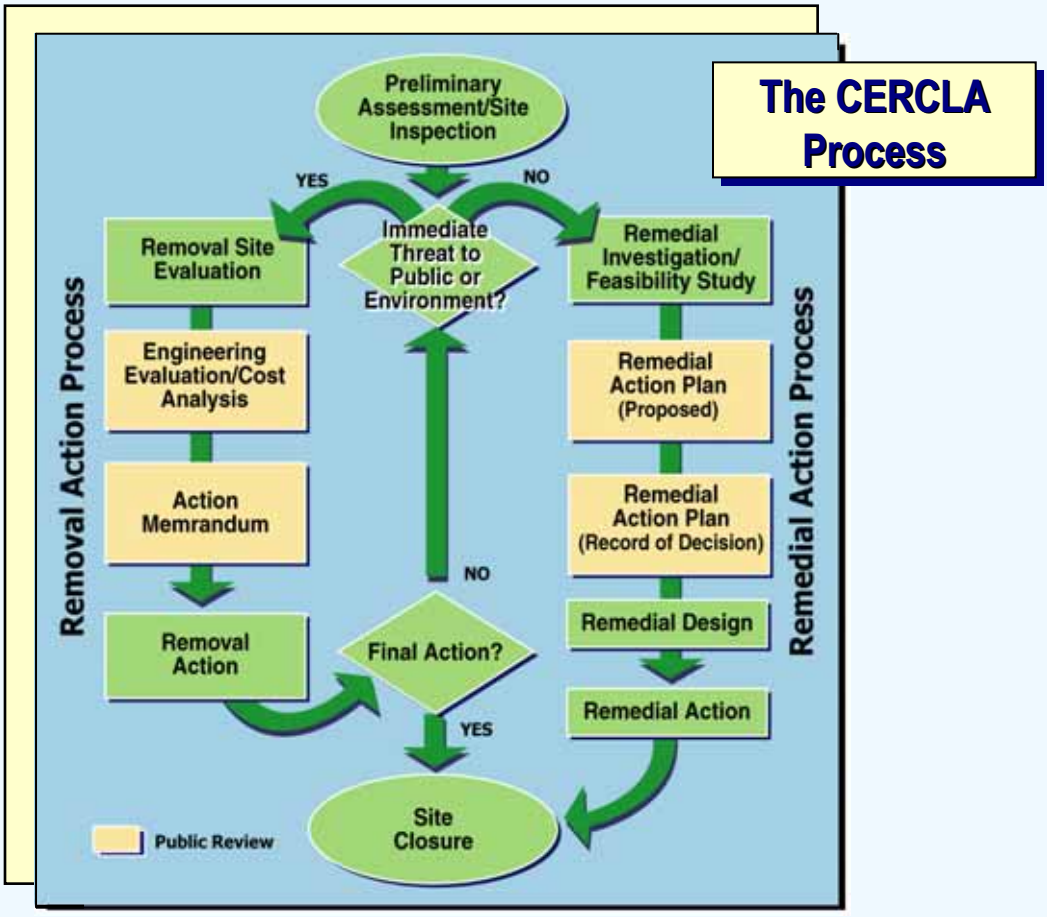
NAS FALLON ENVIRONMENTAL PARTNERS

THE RESTORATION ADVISORY BOARD

The Restoration Advisory Board (RAB) provides a forum for the exchange of information between citizens, the installation, and state and local agencies and promotes a partnership for more responsive cleanup. The RAB at NAS Fallon is currently comprised of NAS Fallon, NDEP, Naval Facilities Engineering Command-Southwest, US Fish and Wildlife Service, Churchill County Economic Development Authority, Churchill County Administration, City of Fallon, Nevada Department of Wildlife, Stillwater National Wildlife Refuge, Truckee-Carson Irrigation District, Fallon Paiute Tribe, Shosone Tribe, the Tribal State Alliance, and the community at large.

The RAB gives community members an opportunity to provide input to the installation's commanding officer regarding environmental restoration activities at an installation. Members on the NAS Fallon RAB reflect the diverse interests within the local community.

The CERCLA Process



NAS Fallon Timeline

1942
NAS Fallon established as part of Western Defense Program

1951
NAAS Fallon used as auxiliary landing field for NAS Alameda, CA

December 1980
CERCLA Legislation passed

October 1986
SARA Legislation passed

April 1988
NAS Fallon Installation Restoration Program Phase 1 activities completed

Sites 5, 7, 8, 15, 19, 25, 26, and 27 closed in 2001 and 2002

1940s | **1950s** | **1960s** | **1970s** | **1980s** | **1990s** | **2000s**

June 1944
Naval Air Auxiliary Station (NAAS) Fallon commissioned

October 1953
NAAS Fallon re-established

January 1972
NAAS Fallon upgraded to Naval Air Station (NAS Fallon)

1988
NAS Fallon Installation Restoration Program

1994
Station-wide Remedial Investigation completed

1995 – present
Supplemental Investigations

Cleanup Actions Site 13 closed in 1997

Sites 9, 10, 11, 12, 13, 17, 23, and 24 closed between 2003 and 2006

Sites 20, 21, and 22 closed in 2004 with limited action to be implemented

THE INSTALLATION RESTORATION PROGRAM SITES

There are 27 IRP sites at NAS Fallon. Sixteen of these sites have been closed as "No Further Action" with NDEP concurrence. Three additional landfill sites (IR 20, 21, and 22) have been closed with "limited action" in the form of re-grading the existing landfill cover and groundwater monitoring. Two sites (4 and 18) are currently entering the decision phase with "No further Action" (closed) as the preferred alternative. There are six active IRP sites (1, 2, 3, 6, 14, and 16) and two Underground Storage Tank (UST)-R sites (UST-R Site 1 [395] and UST-R Site 2 [800 complex]). Additional site characterization will take place in the fall of 2006 at these sites prior to selecting final remedies and preparing decision documents. Site names are color coded to correspond with each site's current status reflected on the map on page 6.

1

Site 1 (Crash Crew Training Area) is an active site located in the southern part of the station. The site consists of an unlined, earth-bermed pit, and two above ground storage tanks. The site was used from the mid 1950s to 1988 for fire training. Flammable waste fuels and solvents were placed in the pit and ignited to conduct the training. Site 1 was part of the intrinsic study conducted by Battelle. Further site characterization is planned for fall 2006 with a Feasibility Study (FS) to follow.

2

Site 2 (New Fuel Farm) is an active site located in the northwestern portion of the station. Site operations consist of storing and dispensing fuels routinely used at the station (jet fuel, avgas, diesel, and mogas). Jet fuel was spilled in 1985 and daily draining of fuel trucks in the loading rack area resulted in free-phase fuels on the groundwater surface at the site. Approximately 60,000 gallons of fuel have been recovered from the site to date. Site 2 was part of the intrinsic study conducted by Battelle. A pilot study using an internal combustion engine to remove free product and soil vapors is planned for summer 2006. Further site characterization is planned for fall 2006 with a Corrective Action Plan (CAP) to follow.

3

Site 3 (Hangar 300 Area) is an active site located in the west-central portion of NAS Fallon. The site consists of several separate areas: the north and south disposal areas, bowser disposal area, the oil/water separator area, ground support equipment area, and the wells air start building area. Mainly aircraft cleaning and maintenance fluids were disposed of at these areas within the site. Site 3 was part of the intrinsic study conducted by Battelle. Further characterization is scheduled for fall 2006 with a FS to follow.

4

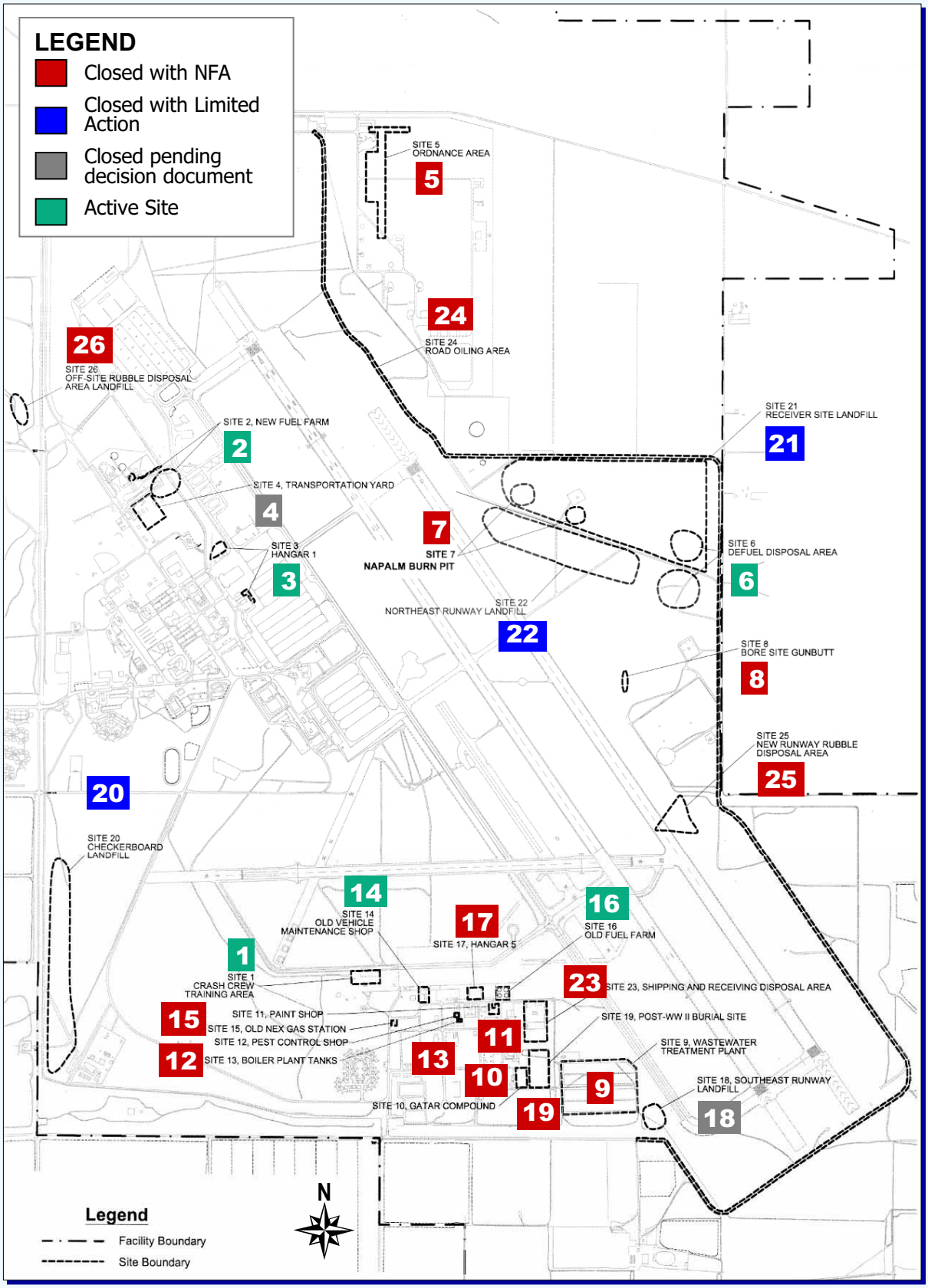
Site 4 (Transportation Yard) is located in the northwest portion of the station downgradient of Site 2. Free product and groundwater impacts observed at the site are considered to be a result of activities conducted at the upgradient Site 2. In March 2004, 278 cubic yards of petroleum-impacted soil was removed from the site. A draft Closure Report with an A through K analysis for soils was submitted to NDEP in June 2006. Impacted groundwater at this site will be addressed under the Site 2 CAP.

5

Site 5 (Ordnance Area) is located in the northern portion of the station. The PA/SI concluded it is unlikely that contamination has resulted from disposal practices at this site. The site was closed with "No Further Action (NFA)" status in May 2001.

6

Site 6 (Defuel Disposal Area) is an active site located in the eastern central portion of the station. The Defuel Disposal area consists of two locations where disposal of off-specification JP-4 and JP-5 took place. The fuel was reportedly contaminated with water or sediment. Site 6 was part of the intrinsic study conducted by Battelle. Further site characterization is planned for fall 2006 with a CAP to follow.


LEGEND
Closed with NFA
Closed with Limited Action
Closed pending decision document
Active Site
SITE 5 ORDNANCE AREA
5
24
SITE 24 ROAD OILING AREA
26
SITE 26 OFF-SITE RUBBLE DISPOSAL AREA LANDFILL
SITE 2, NEW FUEL FARM
2
SITE 21 RECEIVER SITE LANDFILL
21
SITE 4, TRANSPORTATION YARD
4
7
SITE 7 NAPALM BURN PIT
SITE 3 HANGAR 1
3
SITE 6 DEFUEL DISPOSAL AREA
6
SITE 22 NORTHEAST RUNWAY LANDFILL
22
SITE 8 BORE SITE GUNBUTT
8
SITE 25 NEW RUNWAY RUBBLE DISPOSAL AREA
25
20
SITE 20 CHECKERBOARD LANDFILL
14
SITE 14 OLD VEHICLE MAINTENANCE SHOP
17
SITE 17, HANGAR 5
16
SITE 16 OLD FUEL FARM
1
SITE 1 CRASH CREW TRAINING AREA
23
SITE 23, SHIPPING AND RECEIVING DISPOSAL AREA
15
SITE 11, PAINT SHOP
SITE 15, OLD NEX GAS STATION
SITE 12, PEST CONTROL SHOP
11
SITE 19, POST-WW II BURIAL SITE
12
SITE 13, BOILER PLANT TANKS
13
SITE 9, WASTEWATER TREATMENT PLANT
10
9
SITE 18, SOUTHEAST RUNWAY LANDFILL
SITE 10, GATAR COMPOUND
19
18
N
Legend
Facility Boundary
Site Boundary

7

Site 7 (Napalm Burn Pit) is located in the eastern central portion of the station. There were two suspected locations where napalm canisters were reportedly axed open, covered with diesel fuel, and burned. Site characterization activities did not identify significant petroleum or other napalm-related impacts in either of the two areas. The site was closed with NFA status in June 2002.

8

Site 8 (Bore Site Gunbutt) is located in the east central portion of the station. The gunbutt site was used for siting in of aircraft mounted machine guns from the 1940s to the mid 1960s. The gunbutt was removed in 1987. The PA/SI concluded that it is unlikely that any substantial lead projectiles were remaining in near surface soil as a result of re-grading activities in the area for runway construction. The site was closed with NFA status in January 2001.

9

Site 9 (Wastewater Treatment Plant) is located in the southeastern portion of the station. Site characterization activities did not identify contaminants of concern at sufficient quantities or concentrations to require active remediation. The site was closed with NFA status in November 2003.

10

Site 10 (GATAR Compound) is located in the southeastern portion of the station. Site characterization activities did not identify polychlorinated biphenyls (PCBs) impacts at the site. However, minor amounts of chlorinated solvents were identified in groundwater at the site. The site was closed with NFA status in January 2005. Any impacts to groundwater at this site will be addressed in the Site 16 FS.

11

Site 11 (Paint Shop) is located in the southeastern portion of the station. Minor amounts of chlorinated solvents were observed in groundwater at this site. The site was closed with NFA status in January 2005. Any impacts to groundwater at this site will be addressed in the Site 16 FS.

12

Site 12 (Pest Control Shop) is located in the southeastern portion of the station. Site characterization activities identified limited pesticide impacts to near surface soil, which do not pose a threat to Human Health or the Environment. The site was closed with NFA status in January 2005.

13

Site 13 (Boiler Plant Tanks) is located in the southeastern portion of the station. Tank filling operations reportedly resulted in surface spills of fuels. Spills may have consisted of No. 6 fuel oil, waste lubrication oil, hydraulic fluid, JP-5, and diesel fuel. The tanks were removed in 1992 and the site was closed with NFA status in May 1997.

14

Site 14 (Old Vehicle Maintenance Shop) is an active site located in the southeastern portion of the station. The site was used for vehicle maintenance from 1943 to 1971. Operations at the site resulted in significant petroleum hydrocarbon and solvent impacts to soil and groundwater. Approximately 130 gallons of petroleum have been recovered from the site. Site 14 was part of the intrinsic study conducted by Battelle. Further site characterization is scheduled for fall 2006 with a FS to follow.

15

Site 15 (Old Navy Exchange Gas Station) is located in the southeastern portion of the station. The station reportedly operated from 1944 through the early 1960s. This site was closed with NFA status in August 2001.

16

Site 16 (Old Fuel Farm) is an active site located in the southeastern portion of the station. This site served as the original fuel storage and distribution center for the station from 1943 to 1962. Operations at the site resulted in significant petroleum hydrocarbon impacts to soil and groundwater. Site 16 was part of the intrinsic remediation study conducted by Battelle. A groundwater containment system is currently in operation to prevent potential migration of contaminated groundwater into the Unamed Drain. Further site characterization is scheduled for fall 2006 with a FS to follow.

17

Site 17 (Hangar 7) is located in the southeastern portion of the station. Runoff from aircraft maintenance and cleaning activities was suspected to have resulted in soil and groundwater impacts at this site. Characterization activities identified limited petroleum hydrocarbon and solvent impacts to soil and groundwater. The site was closed with NFA status in November 2003.

18

Site 18 (Southeast Runway Landfill) is located in the southeastern portion of the station. The site served as a municipal landfill from 1943 to 1946. A limited amount of characterization was conducted due to the detection of low concentrations of pesticides in groundwater immediately downgradient of the site. Pesticides and other contaminants were all at reported non-detect levels in two groundwater sampling events. The Navy will produce a Focused Feasibility Study, Proposed Plan, and Decision Document starting in fall 2006.

19

Site 19 (Post World War II Burial Site) is located in the southeastern portion of the station. Site 19 reportedly received refuse and trash generated during station decommissioning activities between 1946 and 1949. Site characterization activities identified petroleum hydrocarbon impacts to groundwater that were attributed to an upgradient source. The site was closed with NFA status in June 2002.

20

Site 20 (Checkerboard Landfill) is located in the southwestern portion of the station. The site reportedly received trash and other rubble from station operations between 1951 and 1965. Site characterization indicated that contaminants associated with waste disposal activities are present at very low concentrations in the on-site soil and are not migrating from the site through groundwater transport. *Limited Action* involving limited ground surface re-grading and groundwater monitoring was chosen as the remedy. Currently, a work plan is being developed to implement the remedy.

21

Site 21 (Receiver Site Landfill) is located in the east central portion of the station. The site reportedly received solid and liquid wastes between 1965 and 1975. Solid waste only was disposed of at the site between 1975 and 1980. Site characterization activities identified low levels of petroleum hydrocarbons and trichloroethene (TCE) in soil and groundwater above state action levels; however TCE is not migrating off-site. *Limited Action* involving limited ground surface re-grading and groundwater monitoring was chosen as the remedy. Currently, a work plan is being developed to implement the remedy.

22

Site 22 (Northeast Runway Landfill) is located in the east central portion of the station. The site reportedly received only solid waste from 1981 to 1987. Low levels of petroleum hydrocarbons were identified in soil and groundwater at the site; however, these were attributed to a release from a different site that has since been cleaned up and received NFA status. *Limited Action* involving limited ground surface re-grading and groundwater monitoring was chosen as the remedy. Currently, a work plan is being developed to implement the remedy.

23

Site 23 (Shipping and Receiving Disposal Site) is located in the southeastern portion of the station. The site reportedly received solid wastes from 1968 to 1984. Wastes included trash and rubble. Asbestos was buried in one location and later removed and properly disposed of. A burned out DC-3 fuselage was also reportedly buried in the southern portion of the site. Burn pits were observed at the site in the late 1990s. Site characterization activities identified petroleum hydrocarbon impacts in groundwater that were attributed to an upgradient source. The site was closed with NFA status in November 2003.

24

Site 24 (Road Oiling Area) is the Perimeter Road, which runs along the eastern boundary of the station. This road was oiled with waste oils, fuels, and solvents from 1943 to 1946 and 1951 to 1981 for dust control. Site characterization activities did not identify petroleum hydrocarbon or solvent impacts to soil. Very low concentrations of PCBs were identified in shallow soil at one location. The site was closed with NFA status in November 2003.

25

Site 25 (New Runway Rubble Disposal Area) is located in the east central portion of the station. Concrete, asphalt, and wood from station road and runway projects were reportedly buried in pits or ditches from 1970 to 1980. The site was closed with NFA status in March 2001.

26

Site 26 (Offsite Rubble Disposal Area) is located just off the base property in the west central portion of the station and was closed with NFA status in August 2001. Concrete, asphalt, and wood from station road and runway projects were reportedly buried at this site.

27

Site 27 (Diesel Fuel Spill Site) (not shown on page 6) is located along the access road to bombing range B-17. Diesel fuel was reportedly spilled and approximately 10 cubic yards of soil was impacted. The soil was excavated and re-located to a remote area of bombing range B-19 (not shown on pg. 6). The site was closed with NFA status in May 2001.

UST-R Site 1 (395) (not shown on page 6) was formerly a Military Gas Station that had a 10,000 gallon gasoline tank and a 3,000 gallon diesel tank. These tanks were located approximately 50 feet south of Building 395 in the Transportation Yard. The two tanks were reportedly installed in 1976. The diesel tank was removed in 1990 and the gas tank in February 1994. There are seven monitoring wells associated with the site. Further site characterization is planned for fall 2006 with a CAP to follow.

UST-R Site 2 (800 Complex) (not shown on page 6) is located in the southwest corner of the main station and was originally an Air Force Station built within the boundaries of the Naval Station. The site previously contained two-80,000 gallon Aboveground Storage Tanks for storing DF-4 and JP-5, two-12,000 gallon USTs for storing diesel and one-1,000 gallon UST for storing lube oil. In Building 806, tanks were used for boilers and generators that produced auxiliary power to the facility. All tanks have been removed, but monitoring wells need to be installed to determine the extent of contamination. Further site characterization is planned for fall 2006 with a CAP to follow.

Current Site Status

- Remedial options and systems' performance are currently being evaluated at active IR Sites 1, 2, 3, 6, 14, and 16, as well as UST-R Site 1 (395) and UST-R Site 2 (800 complex).
- Post-remedial actions continue at landfill Sites 20, 21, and 22.
- Sites 4 and 18 are currently pending closure.

Looking Ahead…NAS Fallon Base-wide Approach

The Navy is conducting a wide variety of environmental studies and site clean-ups at NAS Fallon. Base-wide characterization and support is required to complete environmental investigations and remedial action objectives. Some of these base-wide activities are described below.

Refine Conceptual Site Models and Develop a Base-wide Model

Existing Conceptual Site Models (CSM) for active IR sites are dynamic; they will be reviewed and updated, as necessary. The Navy will use the CSMs to develop a base-wide conceptual model.

Develop a Site Management Plan

This plan will guide future environmental characterization and restoration activities at NAS Fallon. It will include discussion of conceptual models and site histories, an overview of the regulatory framework, IR site fact sheets, updated plume maps, and schedules.

Develop and Implement a Base-wide Groundwater Monitoring Plan

Upcoming monitoring will focus on plume geometry, characteristics, and trends at active sites; post-closure monitoring for selected IR sites; and sentinel monitoring near base boundaries.


Photos by Eric Hughes


Photos by Eric Hughes

Information Repositories

Churchill County Library
553 S. Maine Street
Fallon, NV 89406
775-423-7581

Naval Air Station Fallon
Environmental Dept. (Code N45FCW)
4755 Pasture Road
Building 307, 3rd Deck
Fallon, NV 89496
775-426-2244

Diane Silva
Administrative Record (Code EVR)
NAVFACENGCOM Southwest
937 N. Harbor Dr.
Bldg. 1, 3rd Floor
San Diego, CA 92132
619-532-3676

Information repositories contain the administrative record for each of the IRP sites. An administrative record contains reports, data, letters, and other information for a site that collectively describes conditions at the site and documents the process by which the site was evaluated.

NAS Fallon IRP Contacts

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Mailing List Coupon

If you would like to be added to the mailing list to receive information or have a question about environmental restoration activities at NAS Fallon, please fill out this coupon and send it to Mr. Zip Upham at the address listed above.

Question:

_____

_____

_____

Name: _____

Street: _____

City: _____ State: _____ Zip: _____

Affiliation (Optional): _____